Title : Market Management System.

Course : Introduction to database.

Instructor : Kawser Irom Rushee.

Group Name: Team Pheonix.

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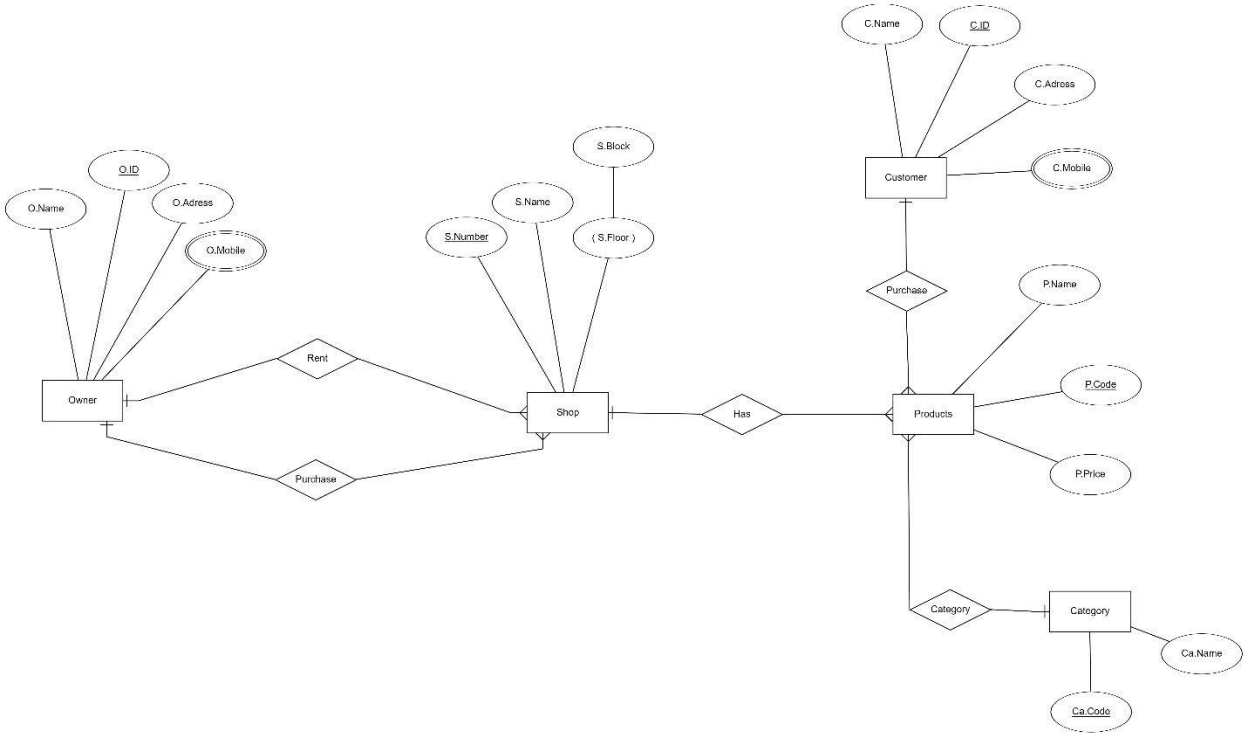
ER Diagram Scenario for Market management system : There are many shops is a market. Each shop has an owner. An owner can rent have many shops. One owner can also purchase many shops. An owner is identified by unique id, name, address and mobile number. An owner can have multiple mobile number. Shop is identified by unique shop number, name and level. Level is composed by block. A shop has many products. Product is identified by unique code, name and price. Products are purchase by customer. One customer may purchase many products. Customer is identified by unique customer id, name, address, phone number. A customer can have multiple phone number. One product belongs to many category and for a category there can be many products. Each category has a name and unique category code.



Normalization:

Rent & Purchase:

UNF:O.ID,O.Name, O.Address, O.Mobile, S.Number, S.Name, S.Block.

1NF:

Here O.Mobile is the multivalued attribute.

O.ID , O.Mobile, S.Name, O.Name, O.Address, S.Number, S.Block.

2NF:

1st: O.ID, O.Address, O.Name,O.Mobile.

2nd: S.Number, S.Name, S.Block

3NF:

1st: O.ID,O.Name,O_H.Number,S.Number.

2nd : O_H.Number,O.Address.

3nd : O.ID, O.Mobile.

4rd: S.Number,S.Name, S.Block.

5th:O.ID**,** S.name.

Purchase:

UNF: C.ID, C.Name, C.Address, C.Mobile,P.Code, P.Name, P.Price.

1NF:

Here C.Mobile is the multivalued attribute.

C.ID, C.Mobile, P.Code, C.Name, C.Address, P.Name, P.Price.

2NF:

1st: C.ID, C.Name, C.Address,C.Mobile.

2nd: P.Code, P.Name, P.Price.

3NF:

1st: C.ID, C.Name,C_H.Number.

2nd:C_H.Number. C.Address.

3nd: C.ID, C.Mobile.

4rd: P.Code ,P.Name, P.Serial.

5th: P.Serial, P.Price.

6th: P.Code, C.ID.

Category:

UNF: P.Code, P.Name, P.Price, Ca.Code, Ca.Name.

1NF: No multivalued attribute. So this is already in 1NF.

P.Code, P.Name, P.Price, Ca.Code, Ca.Name.

2NF:

1st: P.Code, P.Name, P.Price, **2**

nd: Ca.Code, Ca.Name.

3NF:

1st: P.Code, P.Name. P.Code.

2nd: P.Code, P.Price.

3th: Ca.Code, Ca.Name.

4rd: P.Code, Ca.Code.

Has:

UNF: S.Number, S.Name, S.Block, P.Code, P.Name,P.Price.

1NF: No multivalued attribute. So this is already in 1NF.

S.Number, S.Name, S.Block, P.Code, P.Name,P.Price.

2NF:

1st: S.Number, S.Name, S.Block.

2nd: P.Code, P.Price, P.Name.

3NF:

1st: S.Number, S.Name,S.Block.

2rd: P.Code, P.Name, S.Number.

3th: P.Code, P.Price.

Final Table:

1st: O.ID,O.Name, O_H.Number, S.Number.

2nd : H.Number,O.Address.

3nd : O.ID, O.Mobile.

4rd: S.Number,S.Name, S.Block.

5st: C.ID, C.Name,C_H.Number, P.code

6nd:C_H.Number. C.Address.

7nd: C.ID, C.Mobile.

8rd: P.Code ,P.Name, , S.Number.,Ca.Code.

9nd: P.Code , P.Price.

10th: Ca.Code, Ca.Name.

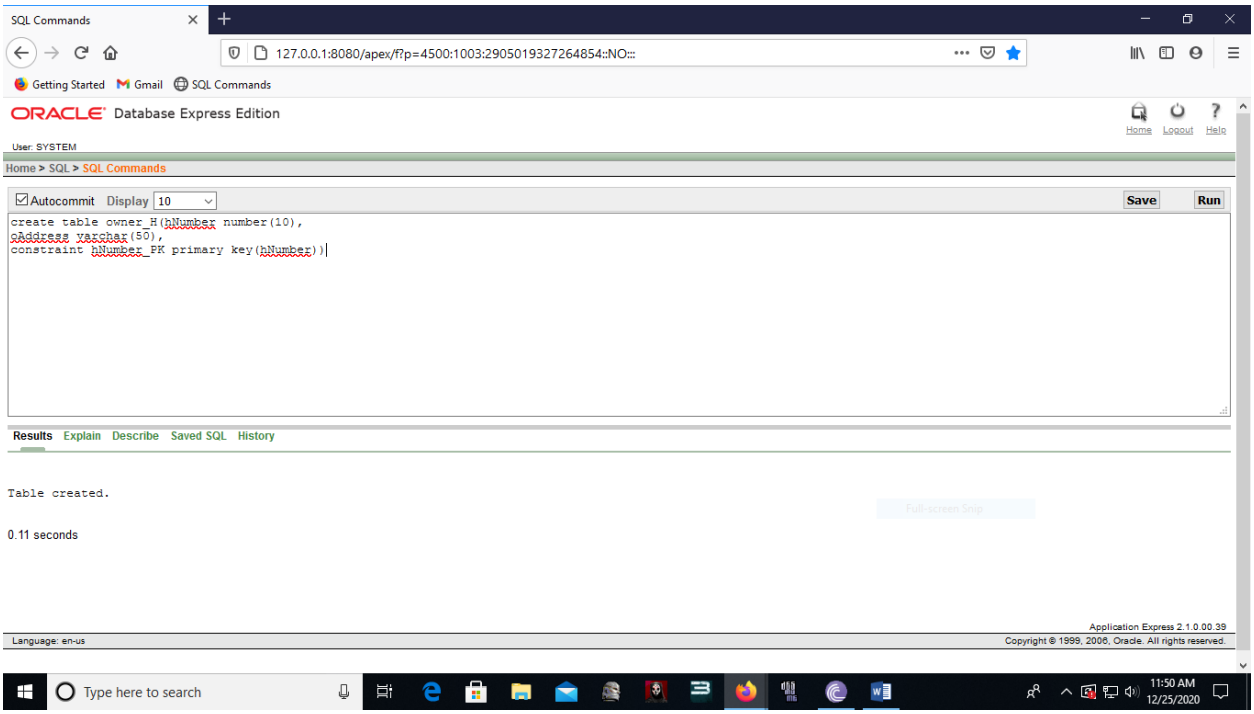
Normal Tables:

(1)

create table owner_H(hNumber number(10),

oAddress varchar(50),

constraint hNumber_PK primary key(hNumber))



(2)

create table owner(oId number(10),

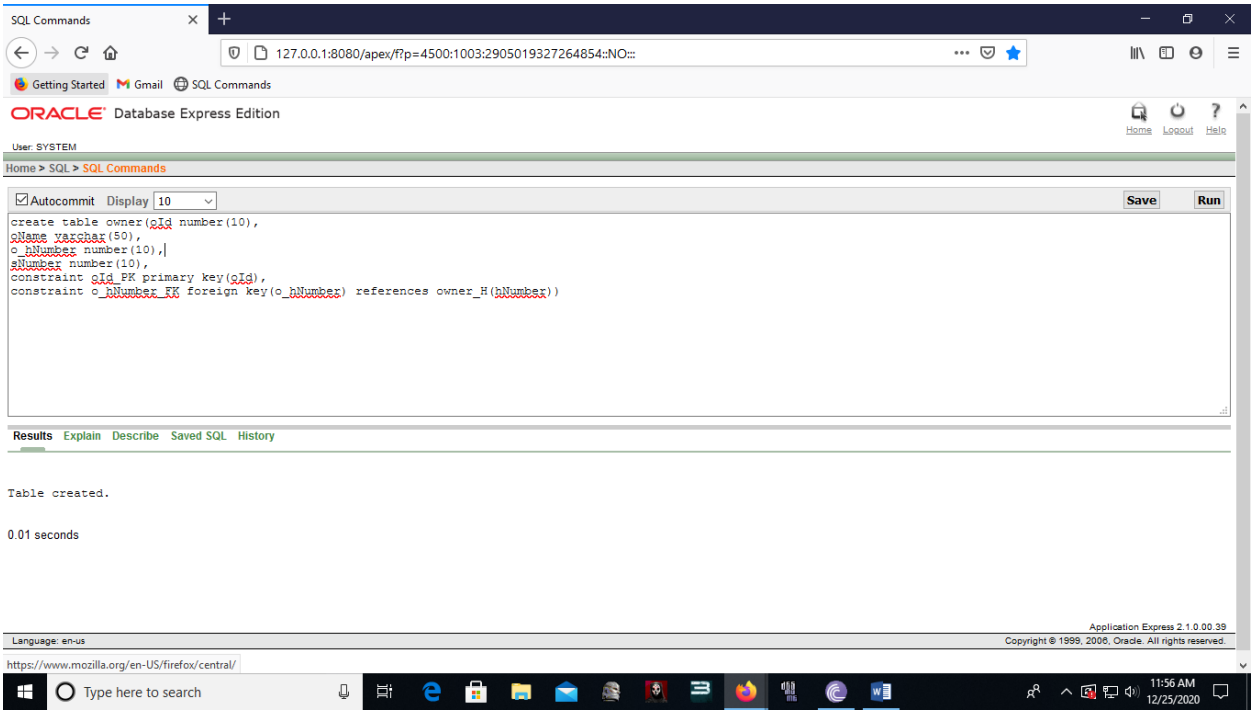
oName varchar(50),

o_hNumber number(10),

sNumber number(10),

constraint oId_PK primary key(oId),

constraint o_hNumber_FK foreign key(o_hNumber) references owner_H(hNumber))



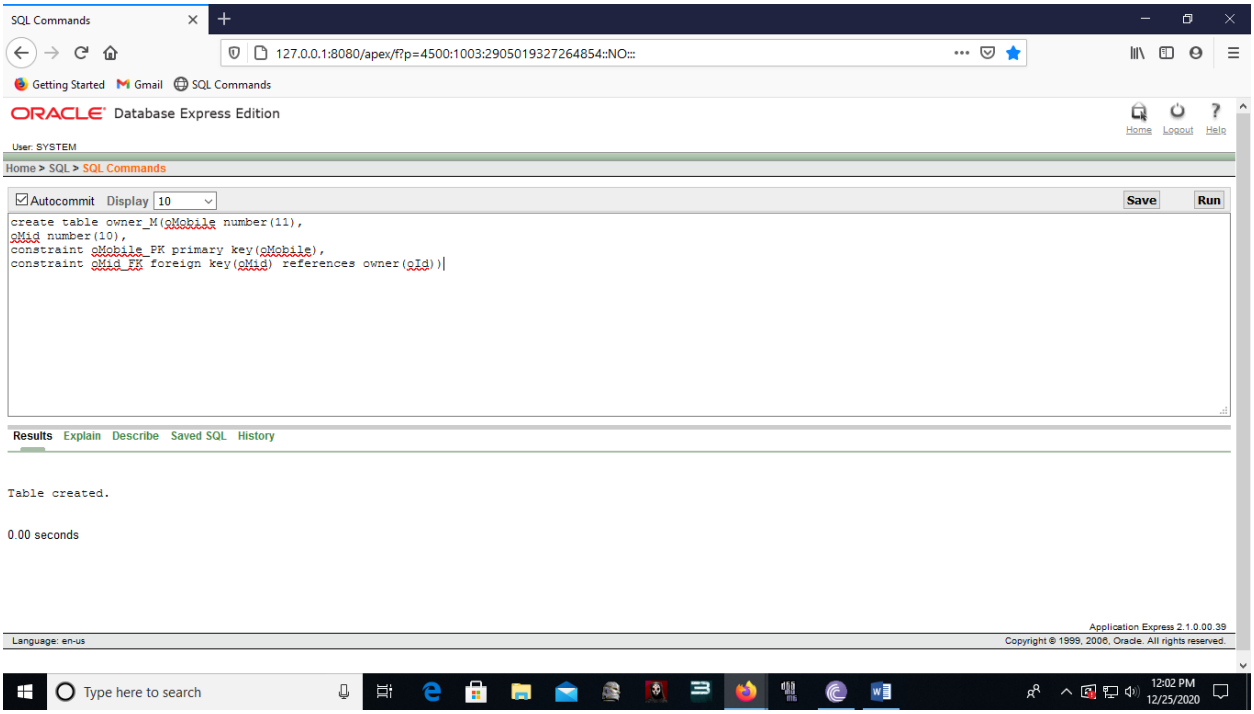
(3)

create table owner_M(oMobile number(11),

oMid number(10),

constraint oMobile_PK primary key(oMobile),

constraint oMid_FK foreign key(oMid) references owner(oId))



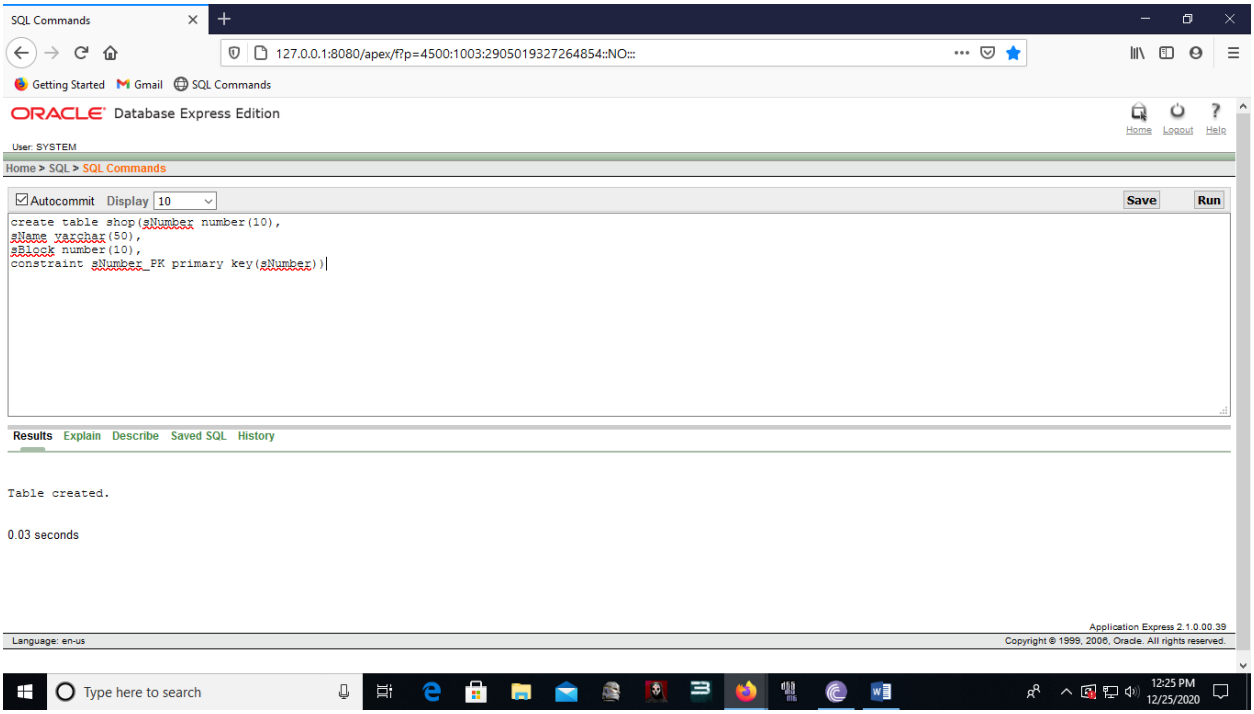
(4)

create table shop(sNumber number(10),

sName varchar(50),

sBlock number(10),

constraint sNumber_PK primary key(sNumber))

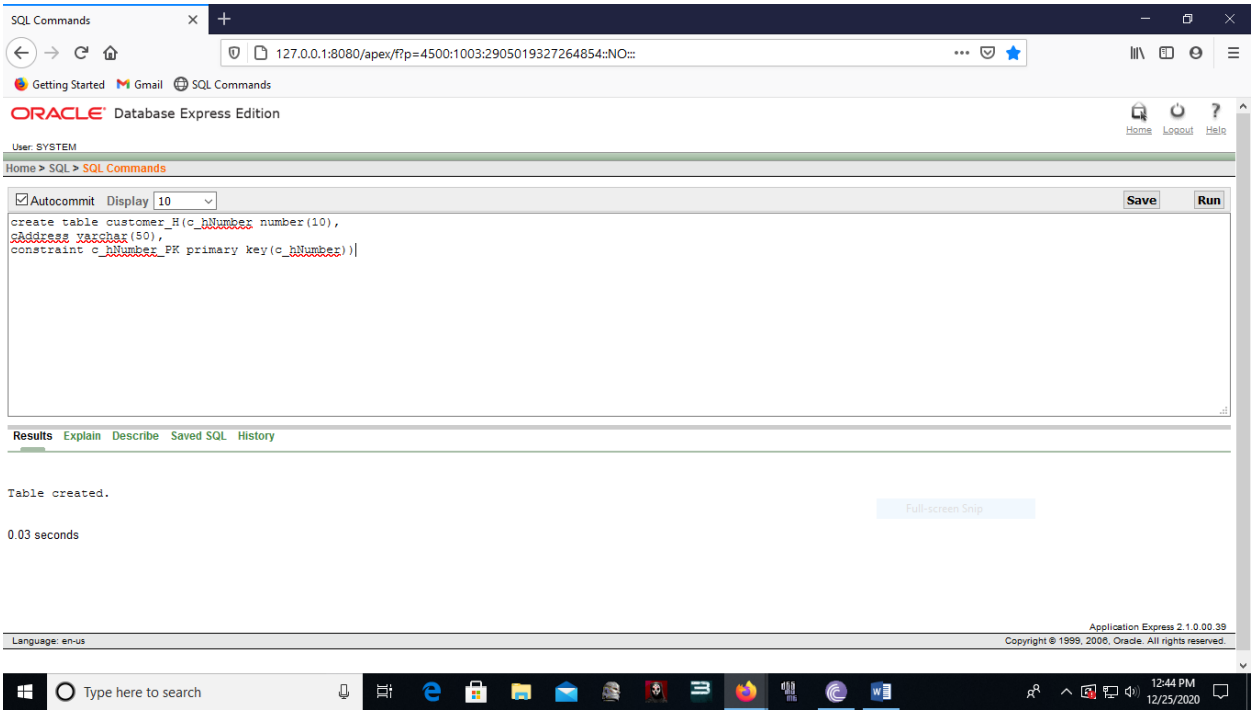


(5)

create table customer_H(c_hNumber number(10),

cAddress varchar(50),

constraint c_hNumber_PK primary key(c_hNumber))



(6)

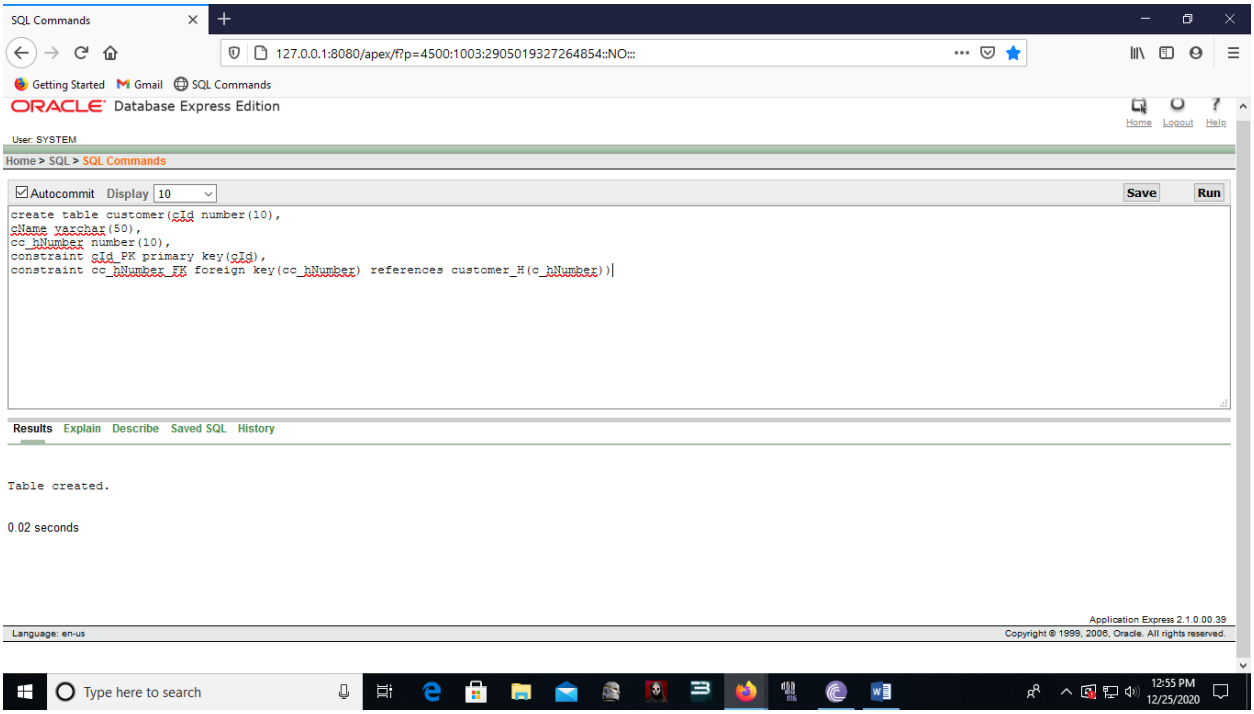
create table customer(cId number(10),

cName varchar(50),

cc_hNumber number(10),

constraint cId_PK primary key(cId),

constraint cc_hNumber_FK foreign key(cc_hNumber) references customer_H(c_hNumber))



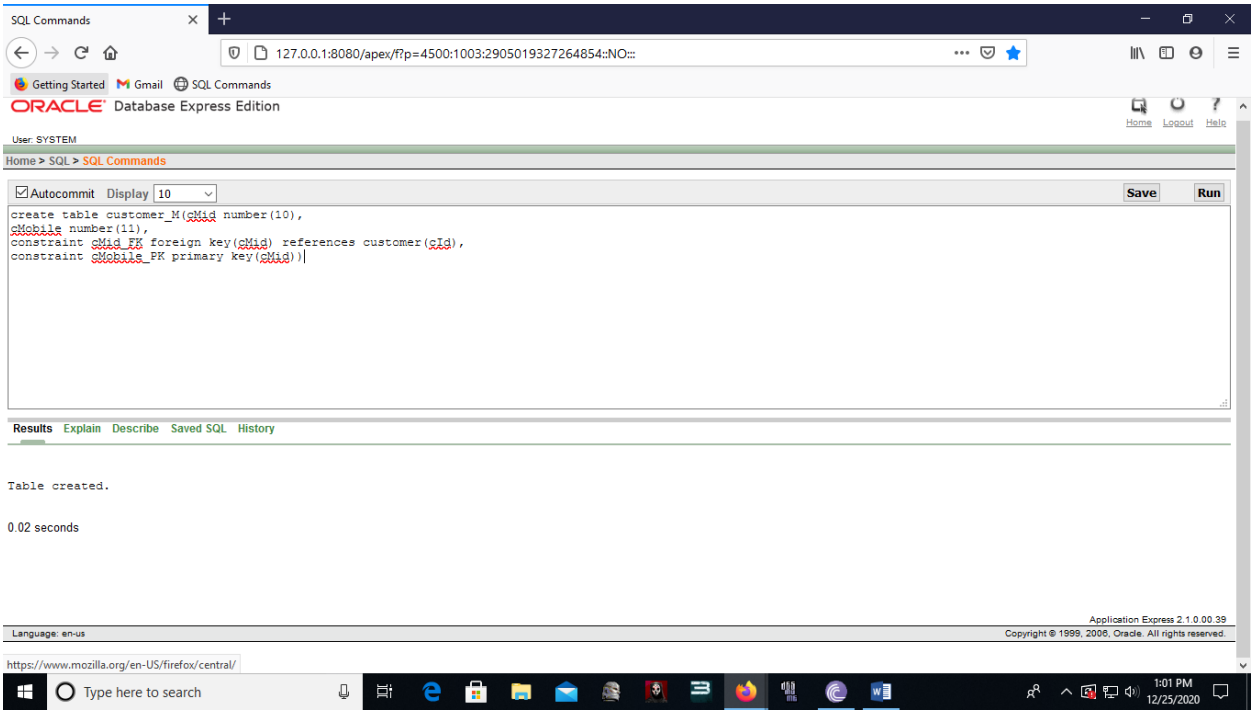
(7)

create table customer_M(cMid number(10),

cMobile number(11),

constraint cMid_FK foreign key(cMid) references customer(cId),

constraint cMobile_PK primary key(cMid))

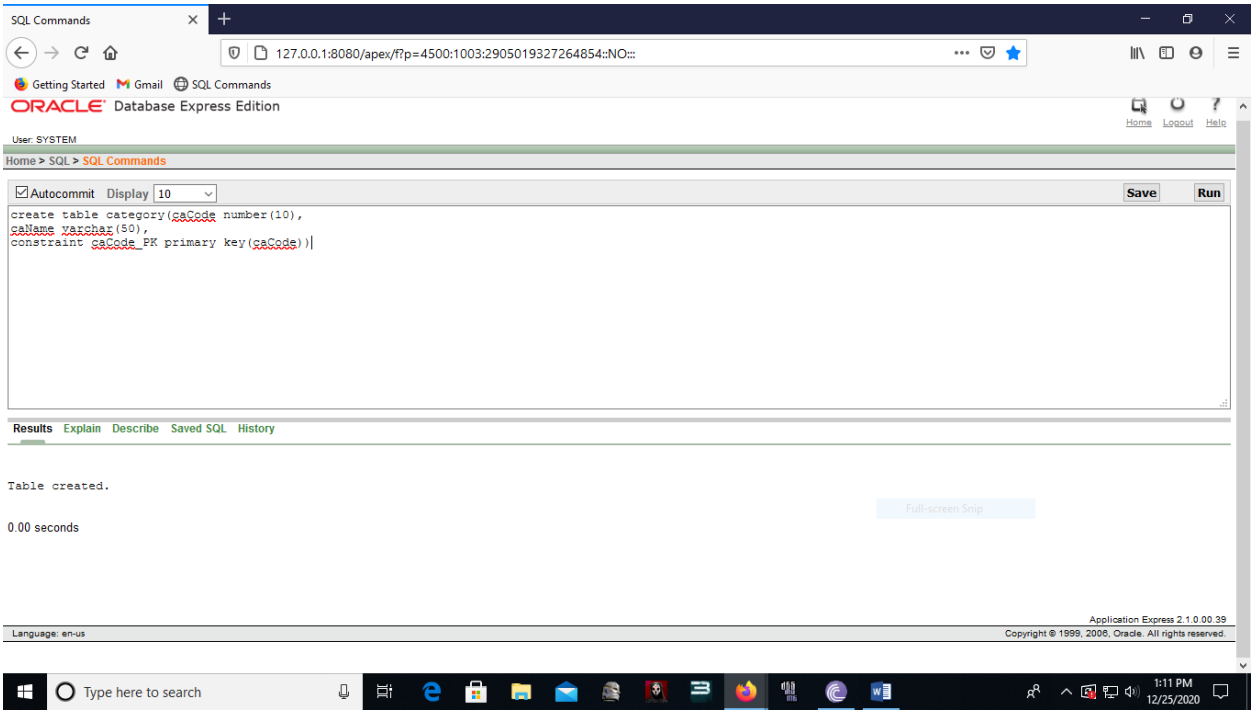


(8)

create table category(caCode number(10),

caName varchar(50),

constraint caCode_PK primary key(caCode))



(9)

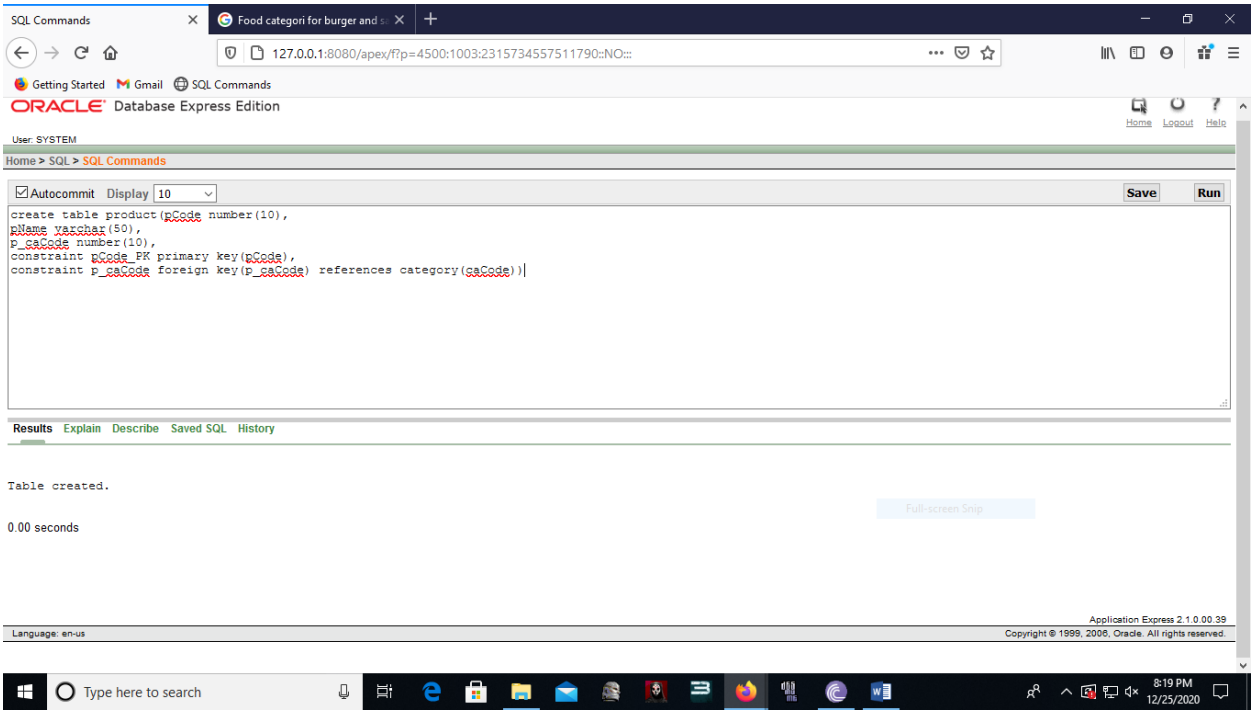
create table product(pCode number(10),

pName varchar(50),

p_caCode number(10),

constraint pCode_PK primary key(pCode),

constraint p_caCode foreign key(p_caCode) references category(caCode))

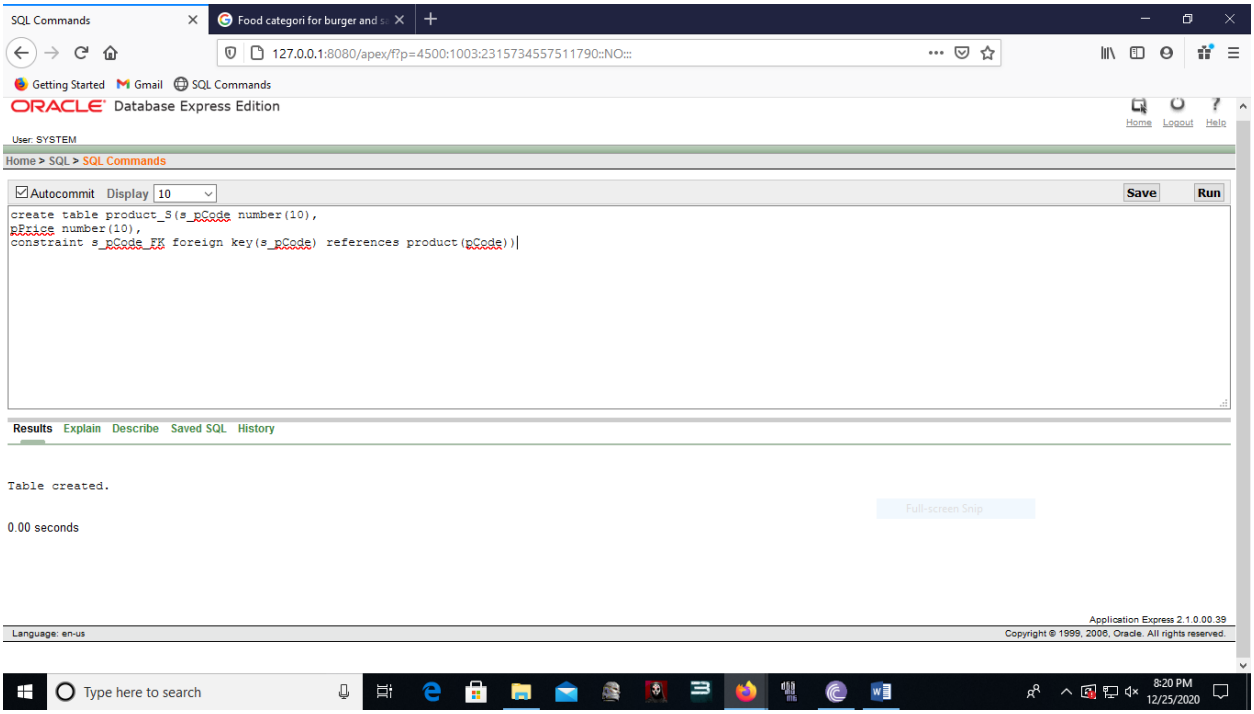


(10)

create table product_S(s_pCode number(10),

pPrice number(10),

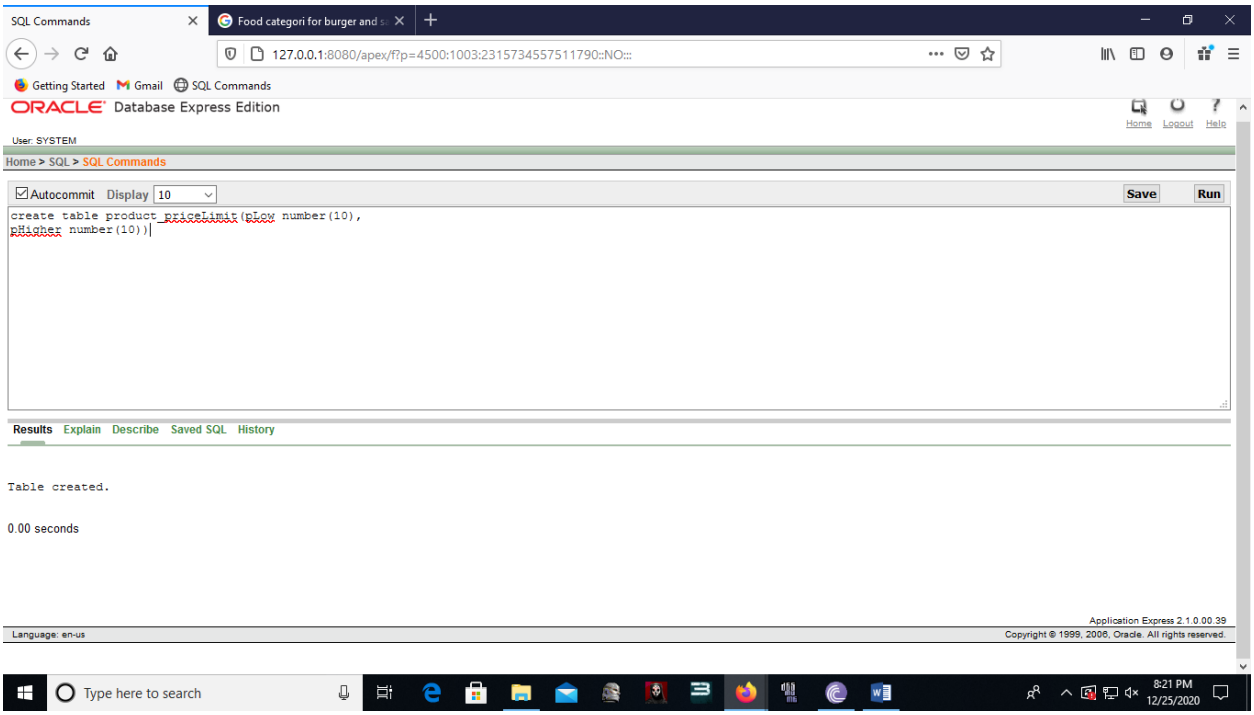
constraint s_pCode_FK foreign key(s_pCode) references product(pCode))



(11)

create table product_priceLimit(pLow number(10),

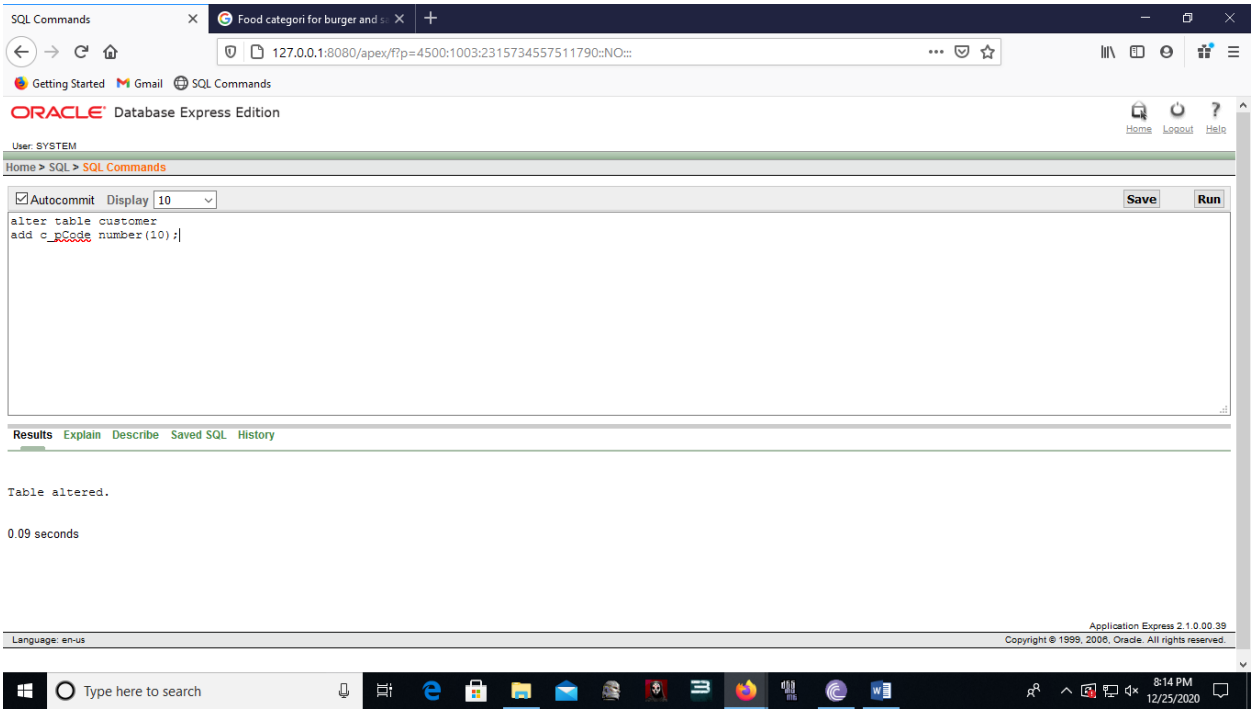
pHigher number(10))



Alter Table:

alter table customer

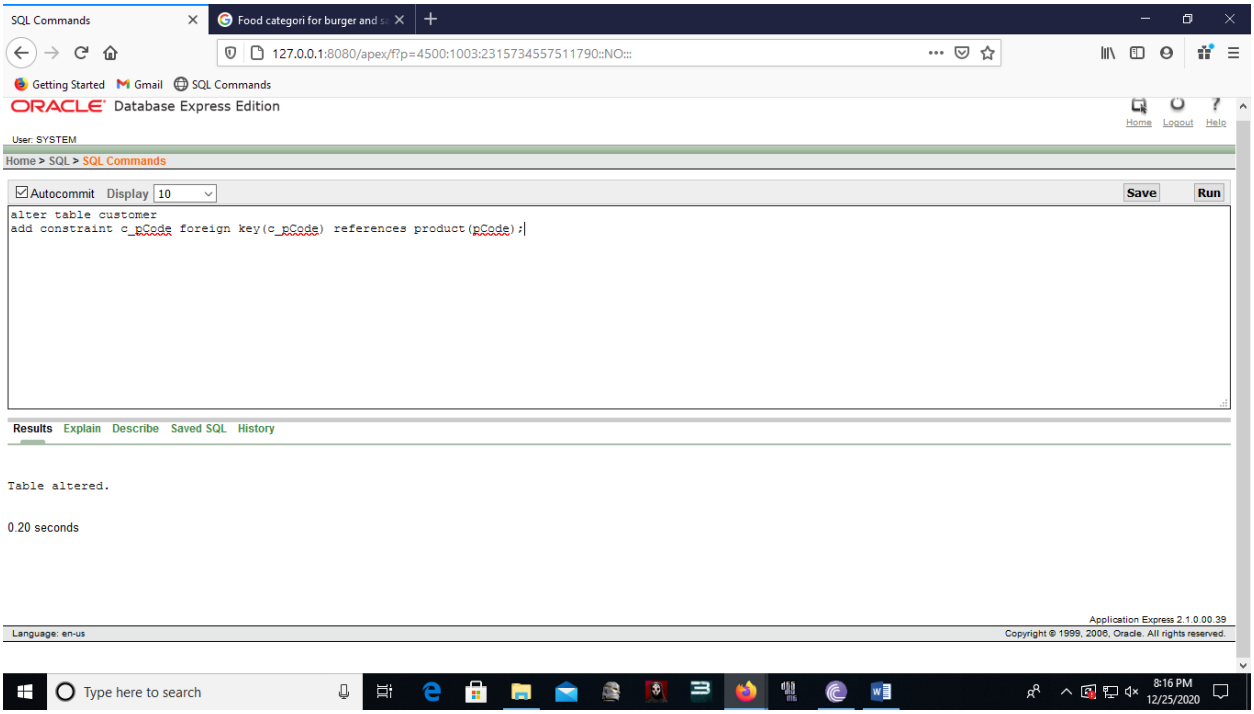
add c_pCode number(10);



Adding constraint:

alter table customer

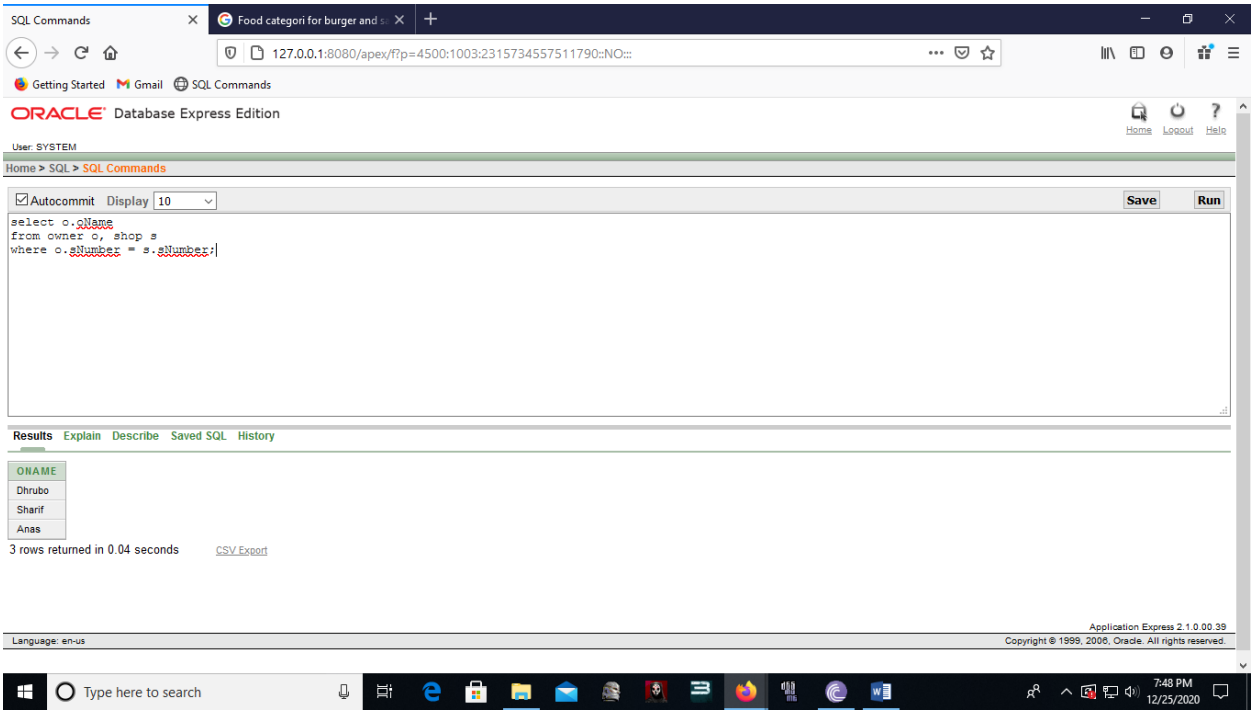
add constraint c_pCode foreign key(c_pCode) references product(pCode);



Equi-Joins:

(1)

```
select o.oName
from owner o, shop s
where o.sNumber = s.sNumber;
```

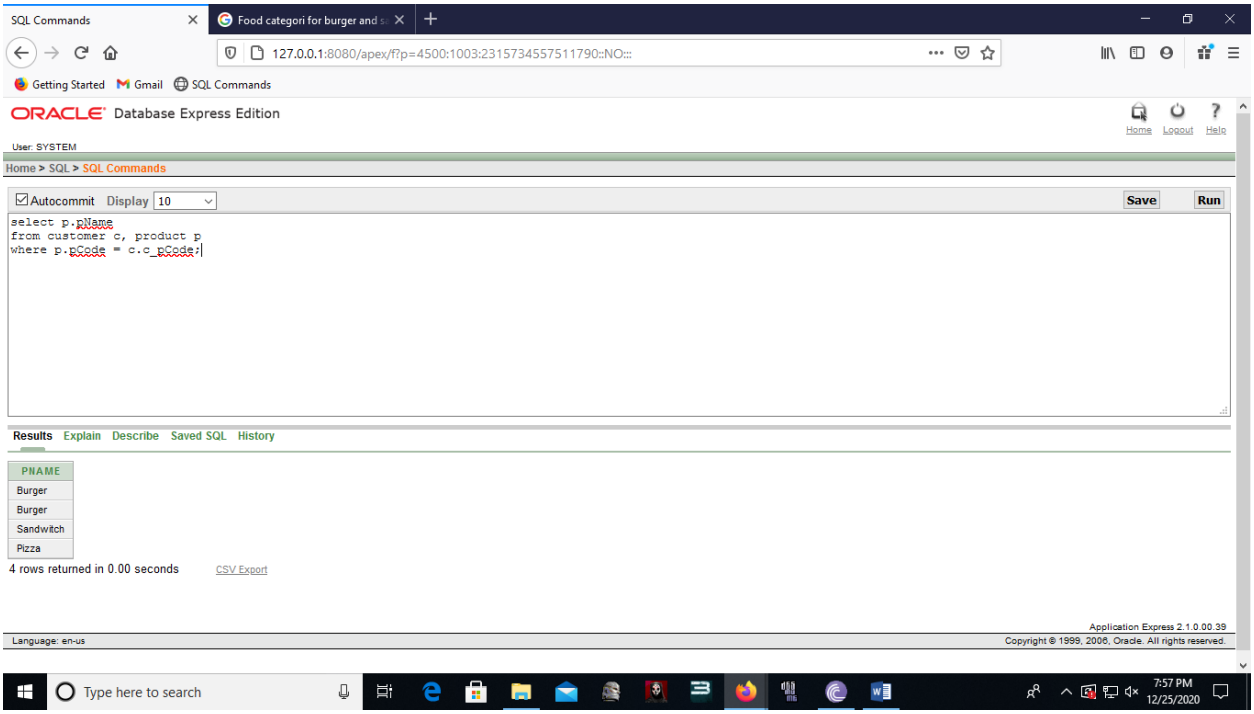


(2)

select p.pName

from customer c, product p

where p.pCode = c.c_pCode;

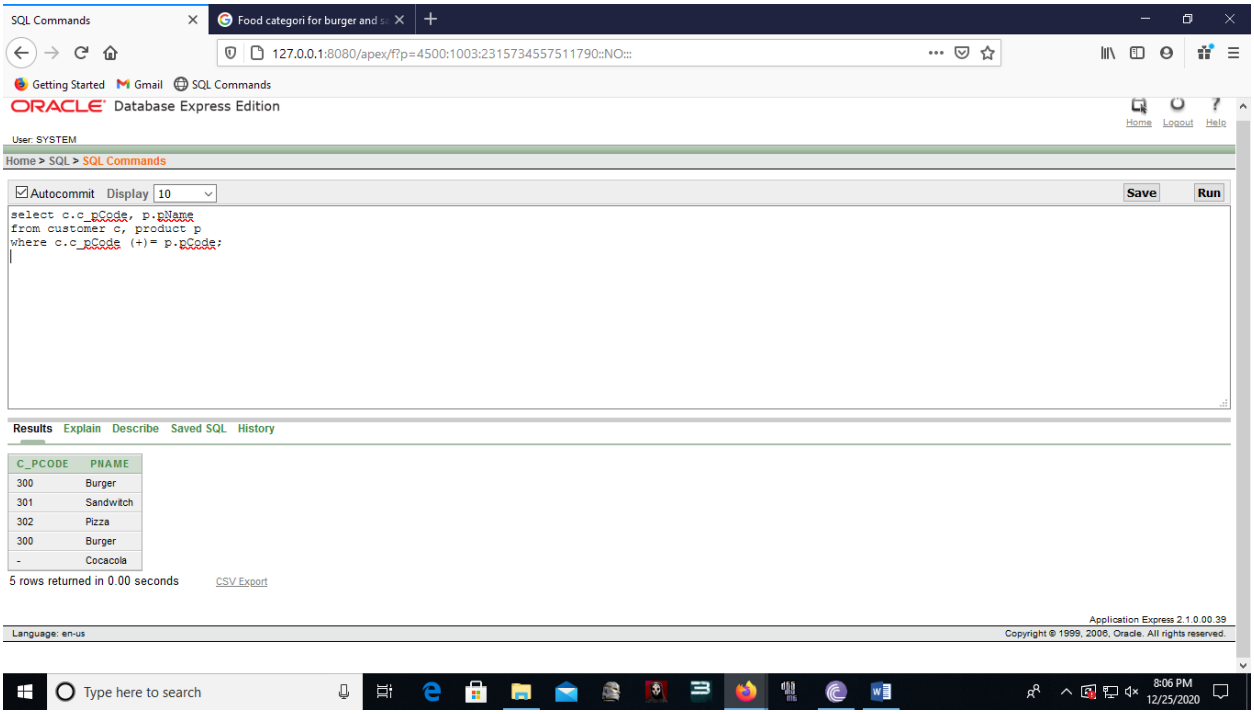


Outer Joint:

select c.c_pCode, p.pName

from customer c, product p

where c.c_pCode (+)= p.pCode;

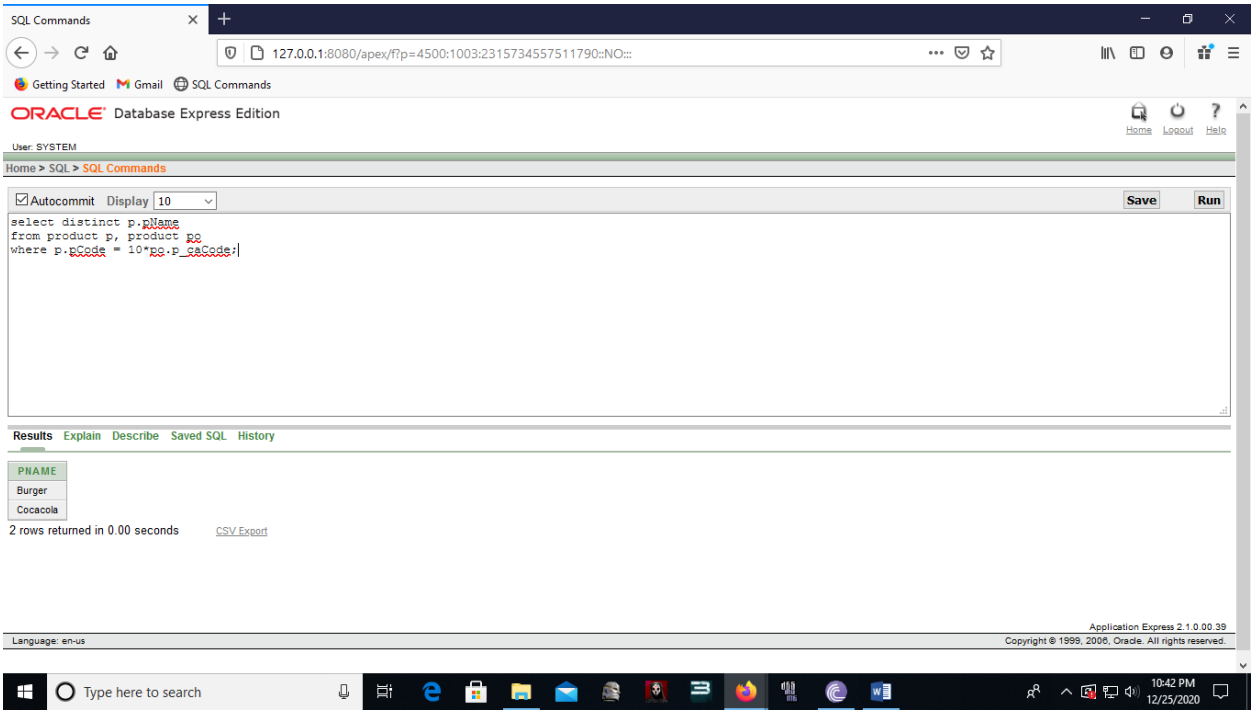


Self joint:

select distinct p.pName

from product p, product po

where p.pCode = 10*po.p_caCode;



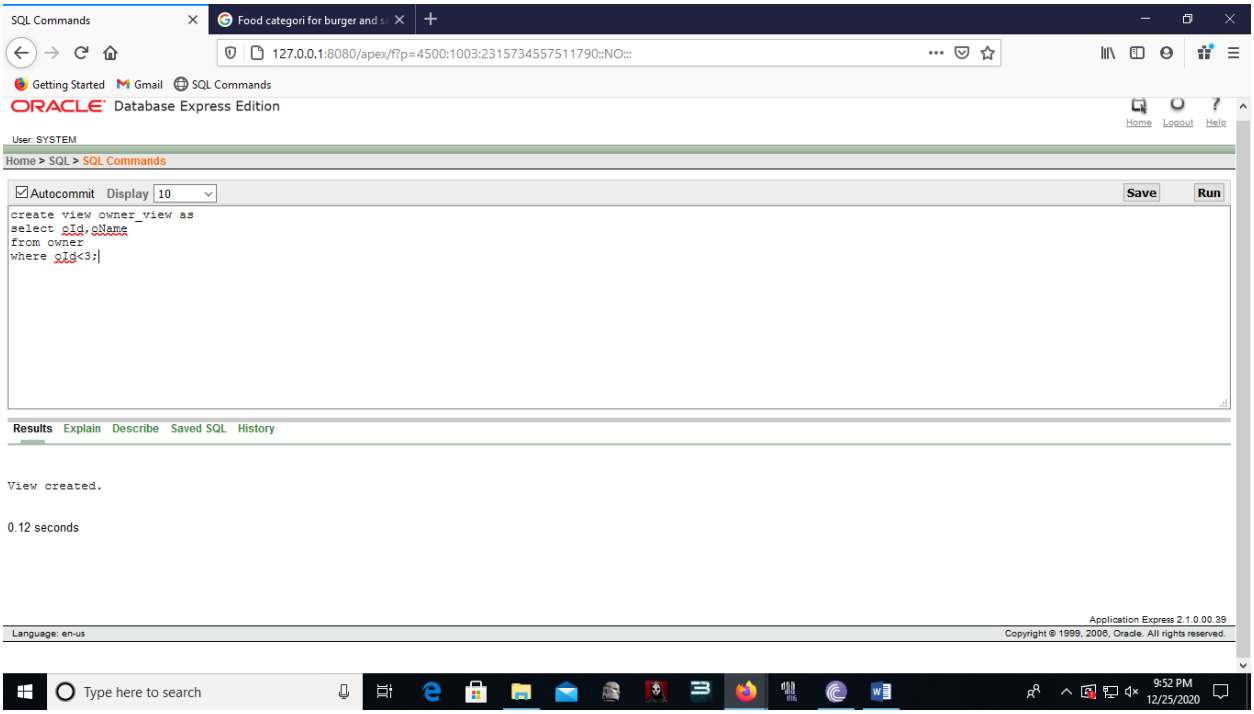
Simple View:

create view owner_view as

select oId,oName

from owner

where oId<3;



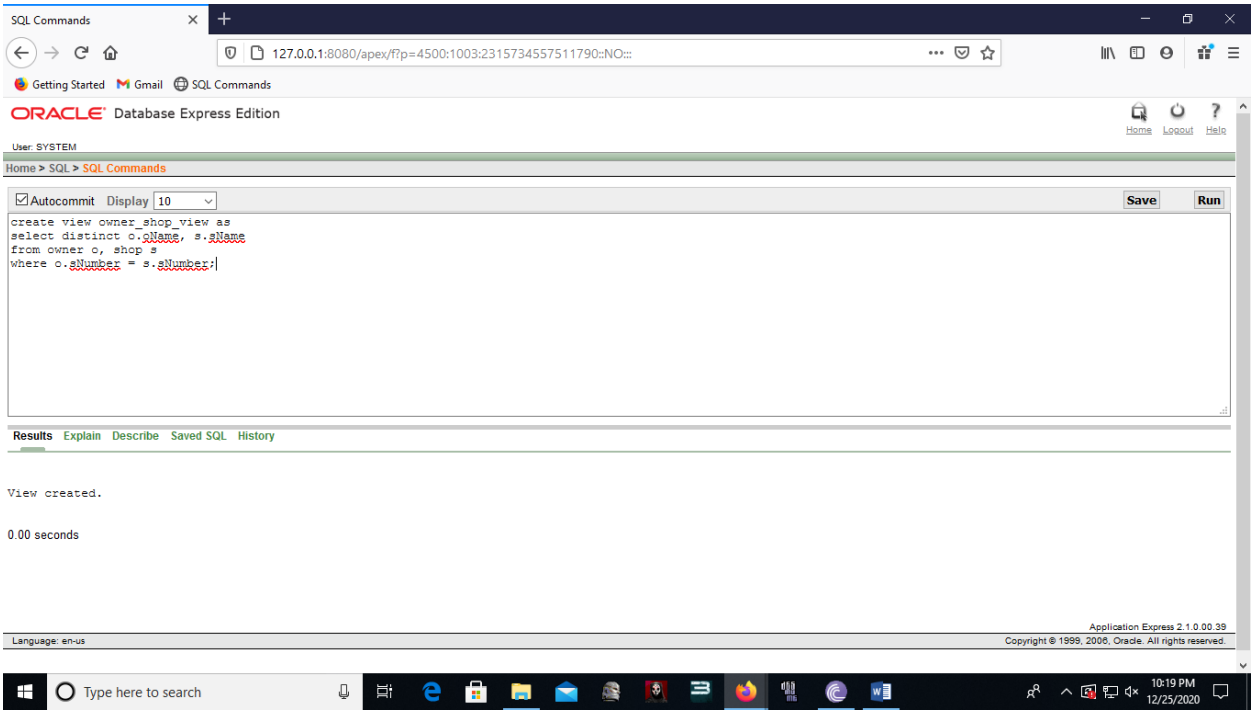
Complex View:

create view owner_shop_view as

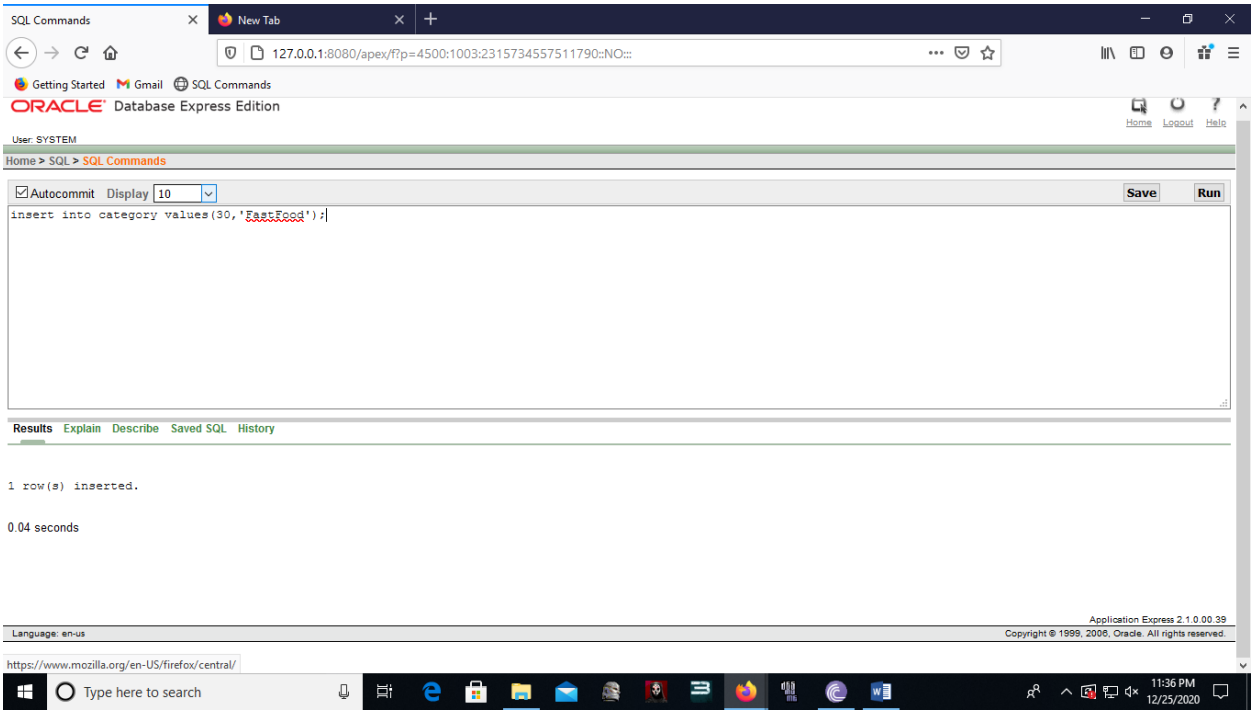
select distinct o.oName, s.sName

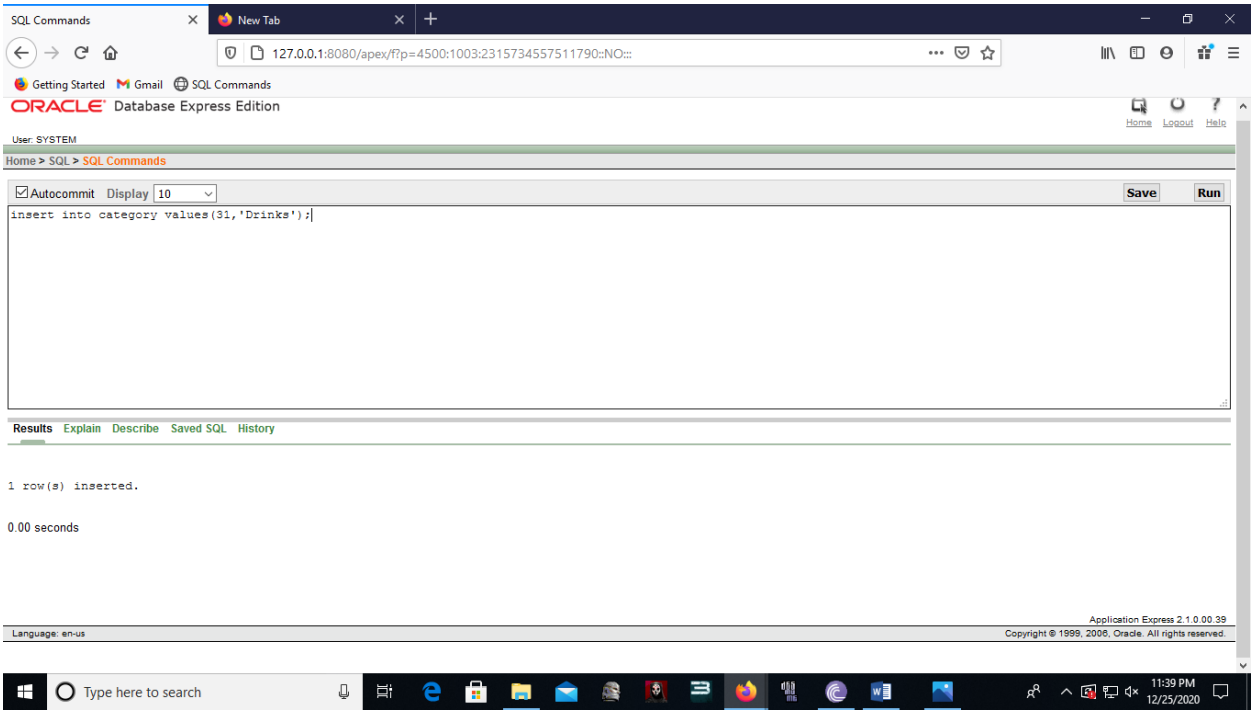
from owner o, shop s

where o.sNumber = s.sNumber;



Data Insertion Screenshots:




SQL Commands
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Getting Started
Gmail
SQL Commands
ORACLE Database Express Edition
Home
Logout
Help
User: SYSTEM
Home > SQL > SQL Commands
Autocommit
Display
10
Save
Run
insert into category values(31,'Drinks');
Results
Explain
Describe
Saved SQL
History
1 row(s) inserted.
0.00 seconds
Application Express 2.1.0.00.39
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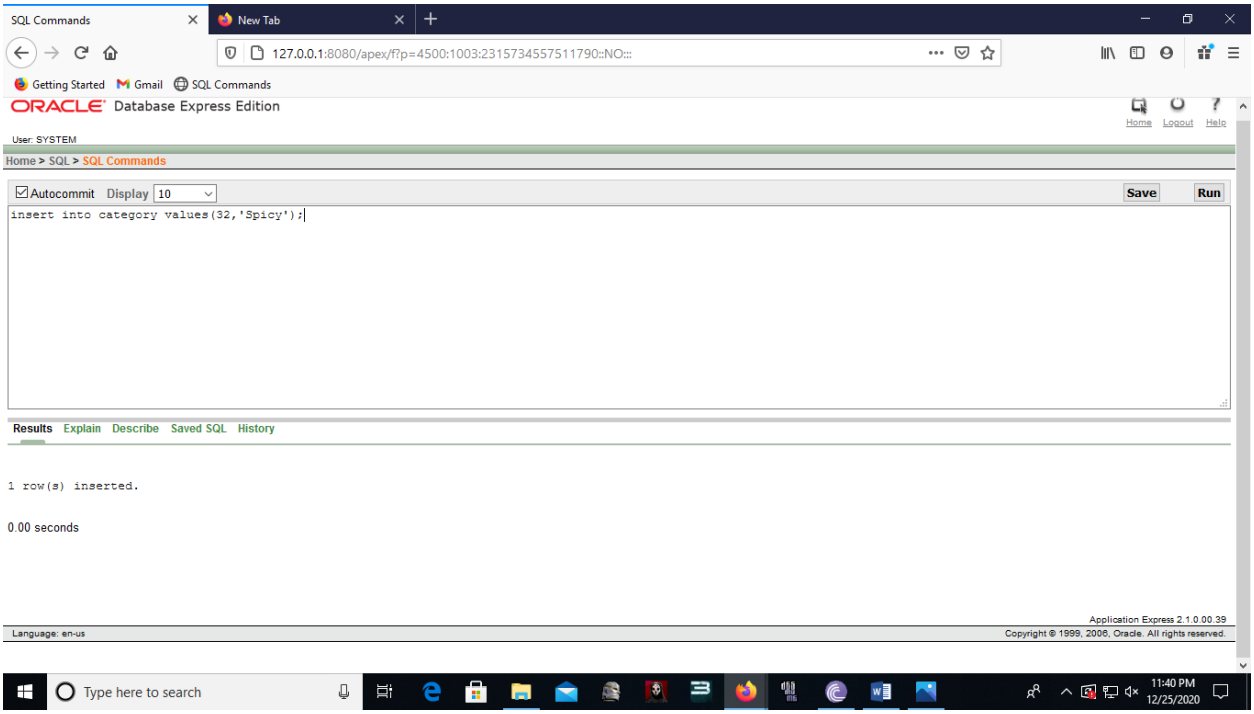
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Getting Started
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SQL Commands
ORACLE Database Express Edition
Home
Logout
Help
User: SYSTEM
Home > SQL > SQL Commands
Autocommit
Display
10
Save
Run
insert into category values(32,'Spicy');
Results
Explain
Describe
Saved SQL
History
1 row(s) inserted.
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Application Express 2.1.0.00.39
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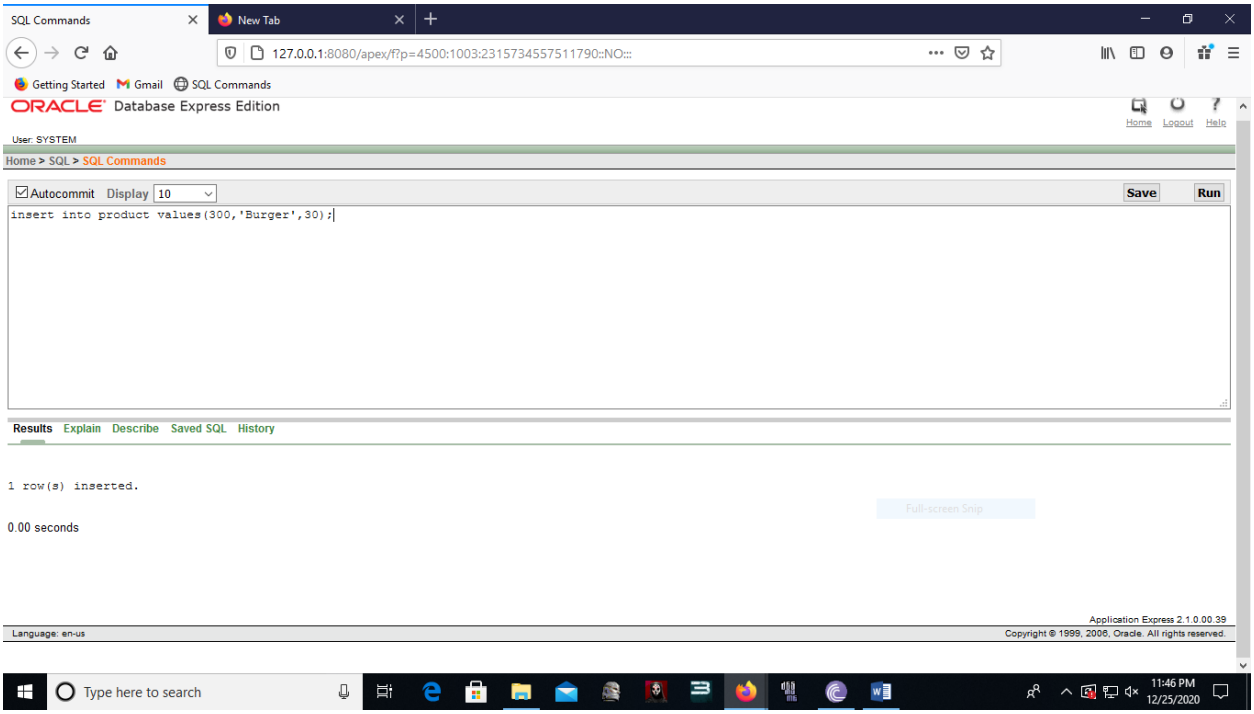
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Gmail
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ORACLE Database Express Edition
Home
Logout
Help
User: SYSTEM
Home > SQL > SQL Commands
Autocommit
Display
10
Save
Run
insert into product values(300,'Burger',30);
Results
Explain
Describe
Saved SQL
History
1 row(s) inserted.
0.00 seconds
Application Express 2.1.0.00.39
Language: en-us
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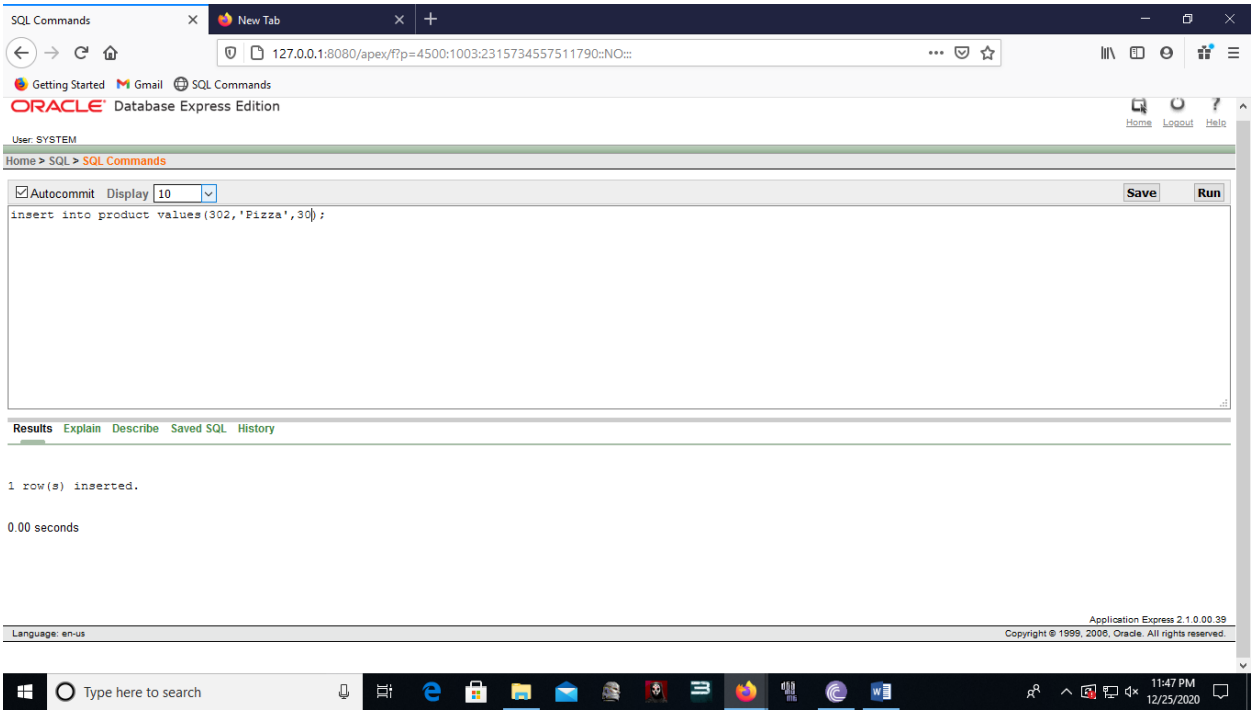
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Getting Started
Gmail
SQL Commands
ORACLE Database Express Edition
Home
Logout
Help
User: SYSTEM
Home > SQL > SQL Commands
Autocommit
Display
10
Save
Run
insert into product values(302,'Pizza',30);
Results
Explain
Describe
Saved SQL
History
1 row(s) inserted.
0.00 seconds
Application Express 2.1.0.00.39
Language: en-us
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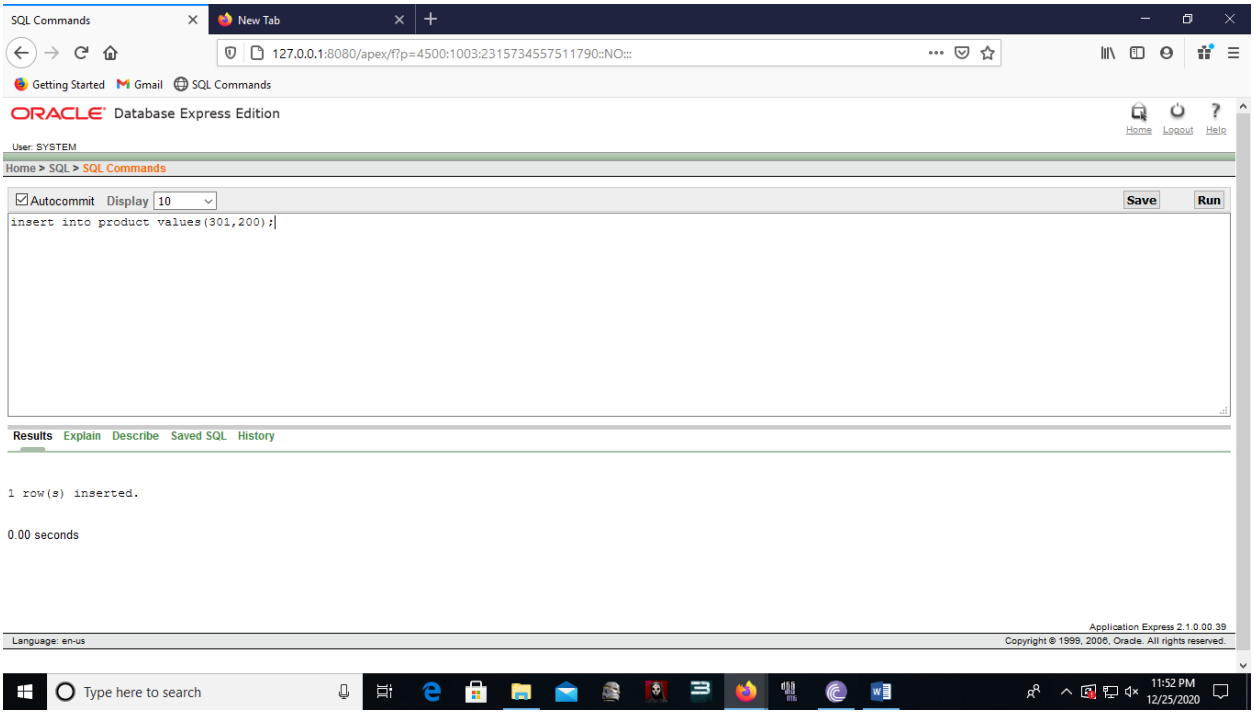
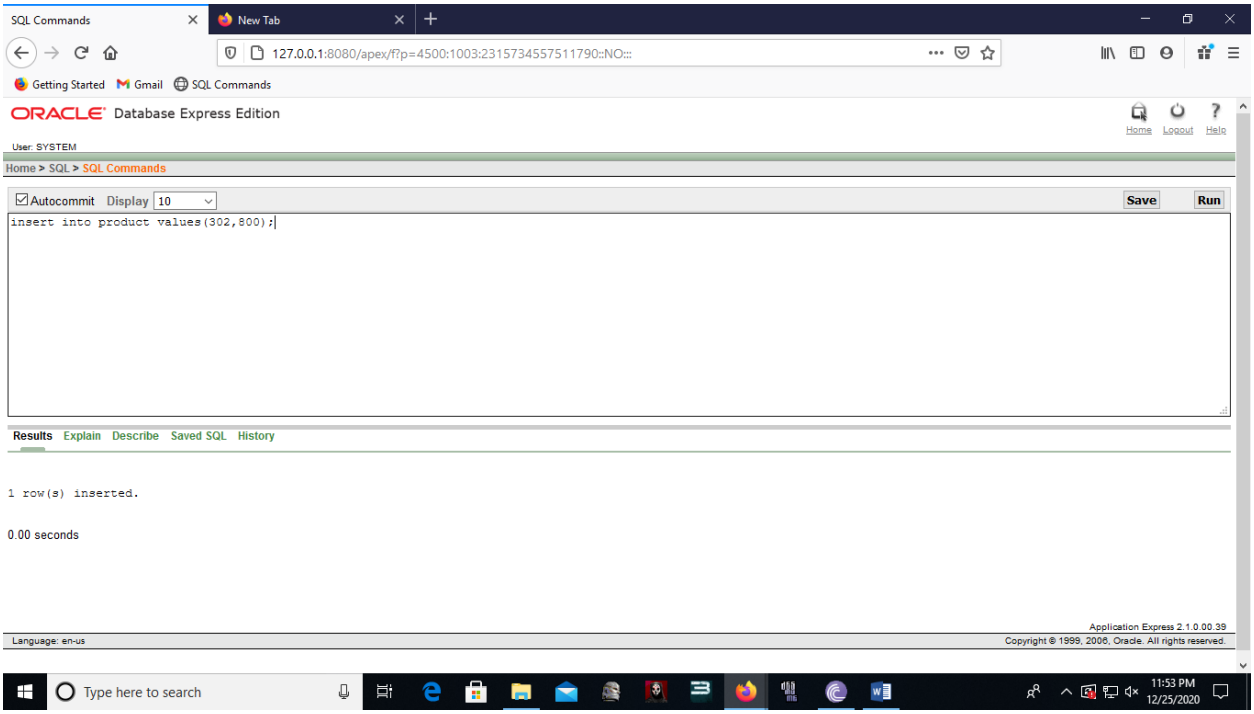




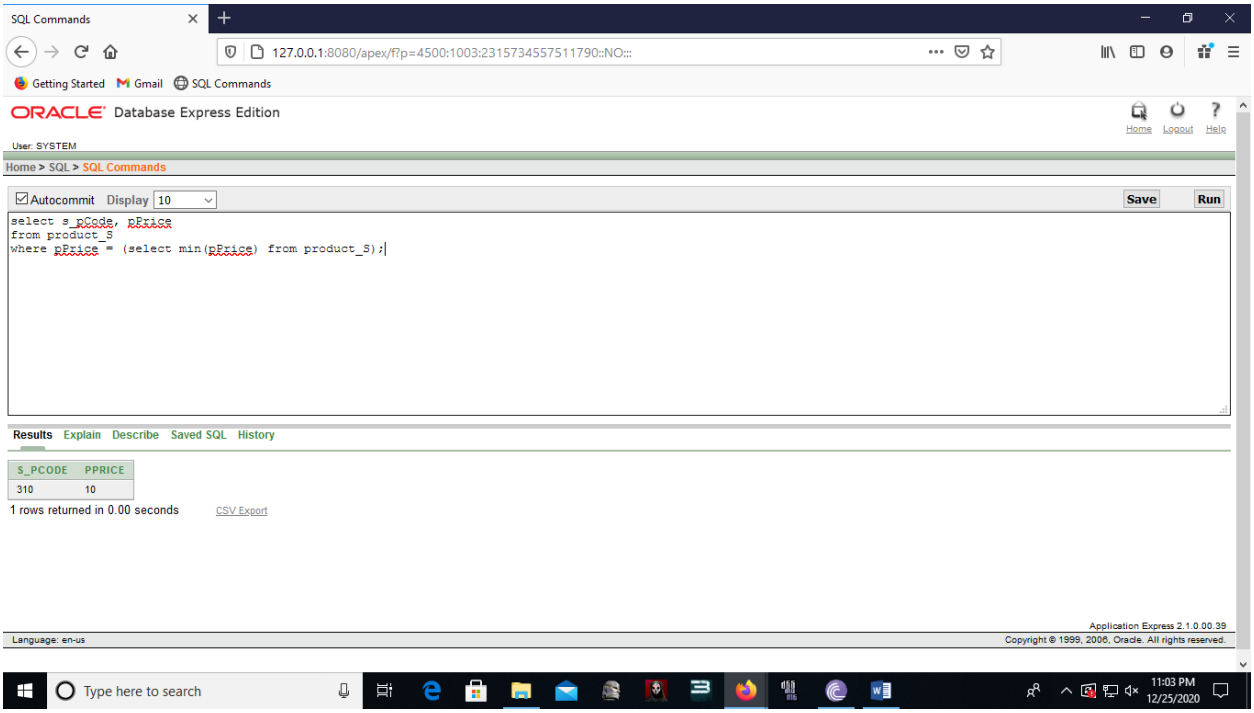
Sub Query:

(1)

select s_pCode, pPrice

from product_S

where pPrice = (select min(pPrice) from product_S);

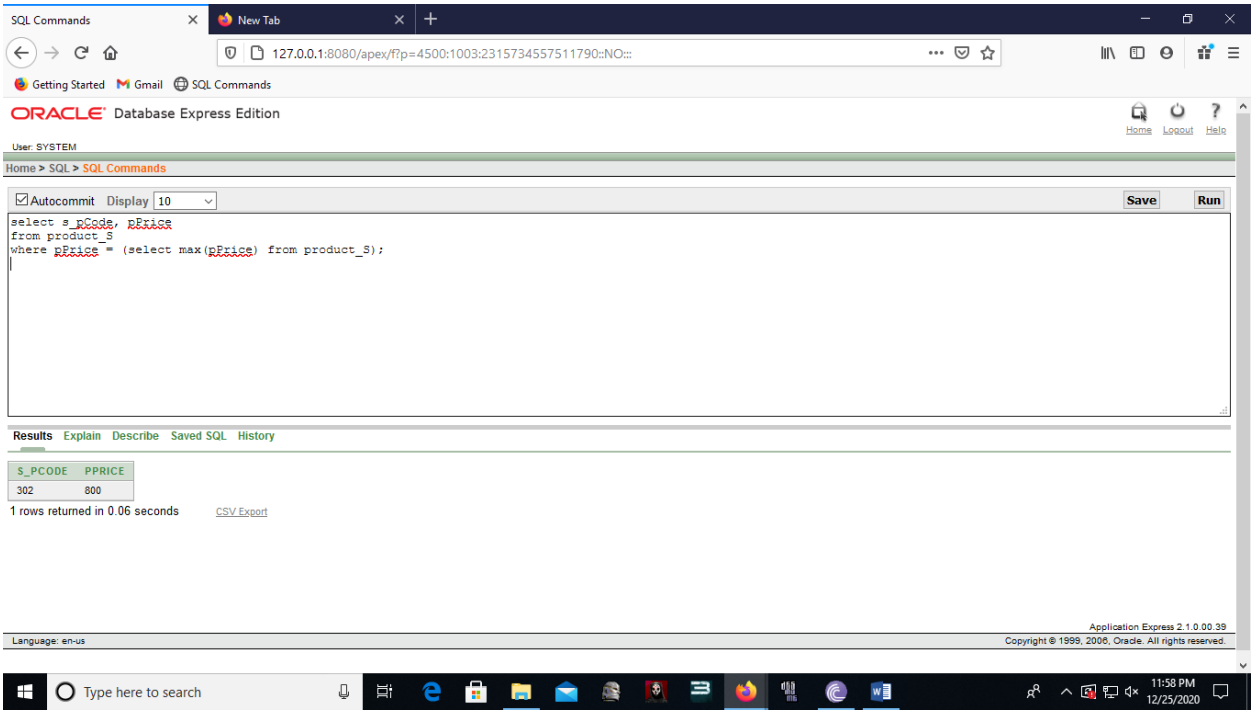


(2)

select s_pCode, pPrice

from product_S

where pPrice = (select max(pPrice) from product_S);

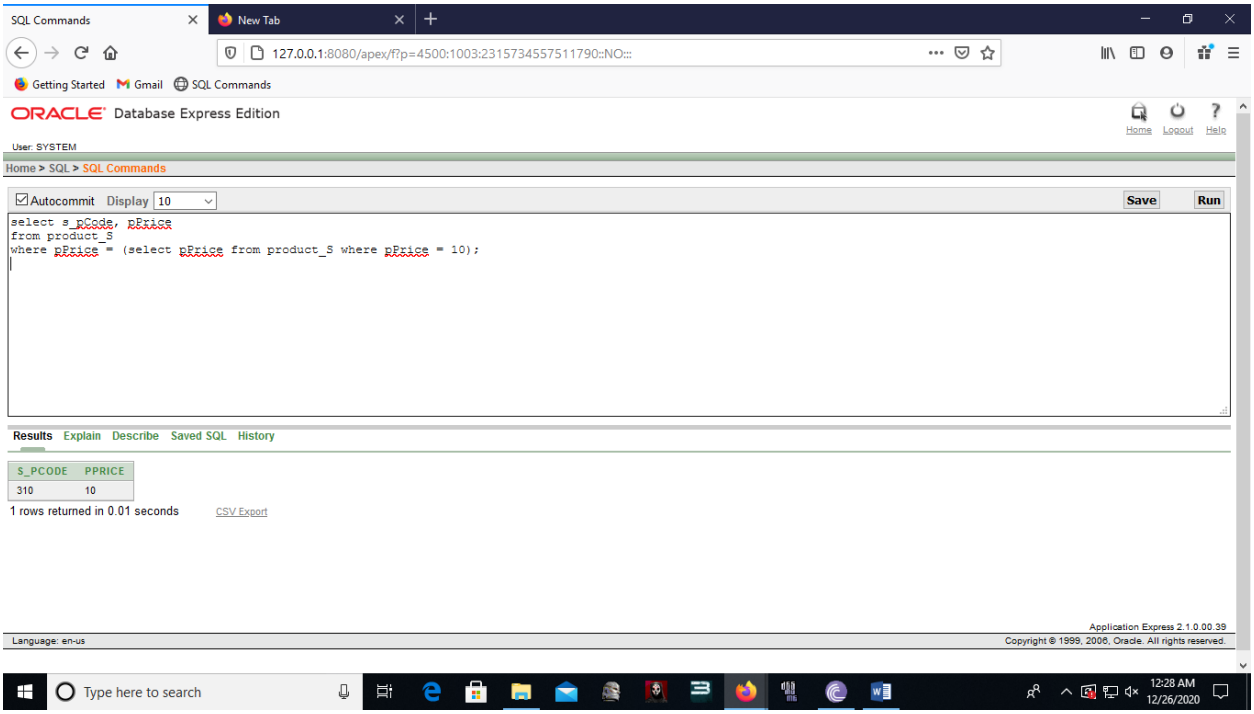


(3)

select s_pCode, pPrice

from product_S

where pPrice = (select pPrice from product_S where pPrice = 10);

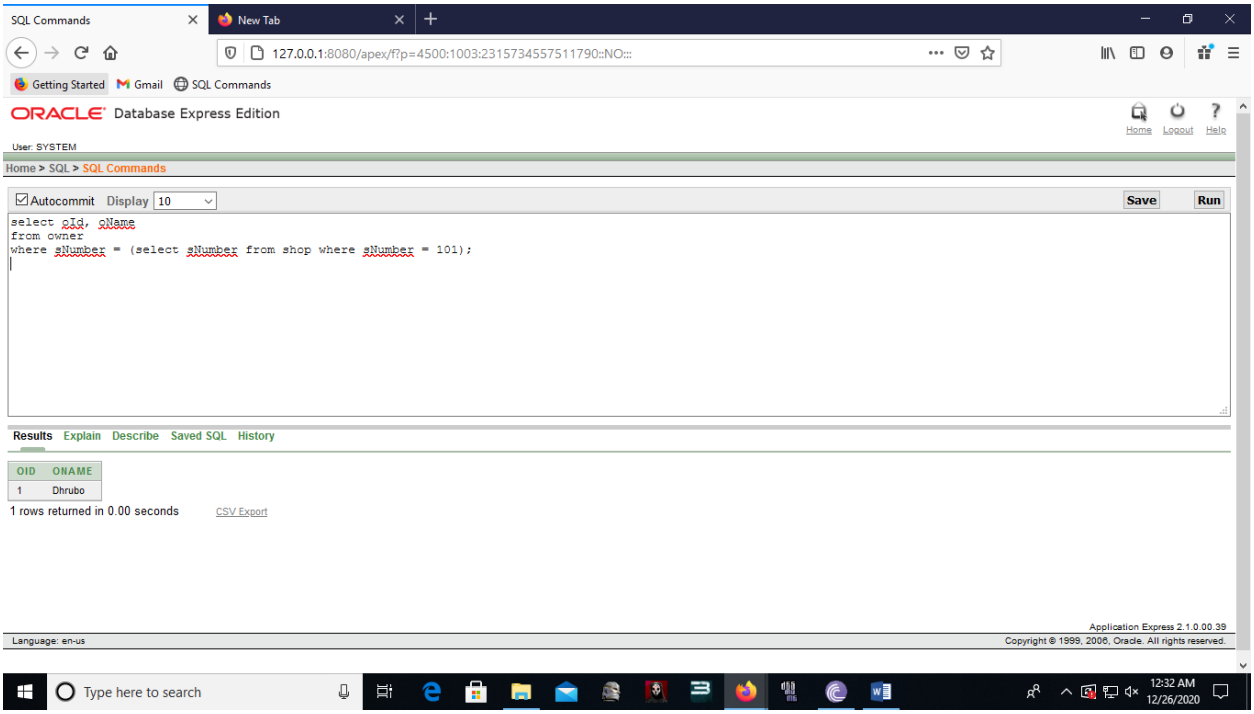


(4)

select oId, oName

from owner

where sNumber = (select sNumber from shop where sNumber = 101);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Getting Started
Gmail
SQL Commands
ORACLE Database Express Edition
Home
Logout
Help
User: SYSTEM
Home > SQL > SQL Commands
Autocommit
Display 10
Save
Run
select oId, oName
from owner
where sNumber = (select sNumber from shop where sNumber = 101);
Results
Explain
Describe
Saved SQL
History
OID
ONAME
1
Dhrubo
1 rows returned in 0.00 seconds
CSV Export
Application Express 2.1.0.00.39
Language: en-us
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